REVIEW:
Shouldering Risks: The Culture of Control in the Nuclear Power Industry
Charlotte Linde

This book is an impressive ethnographic study of the nuclear power industry, focused on four events (problematic situations which could become accidents) in three nuclear power plants.

Shouldering Risks is a valuable addition to a line of studies in a range of disciplines which describe both normal operations as well as incidents and accidents in complex and potentially dangerous systems: Perrow's *Normal Accidents*, Hutchin's *Cognition in the Wild*, and Vaughan's *The Challenger Launch Decision : Risky Technology, Culture, and Deviance at NASA*. All of these books attempt to describe the actual working of complex systems, as opposed to relying on abstract descriptions of these systems as strictly hierarchical in their organization, and thus perfectly amenable to a logic of command and control for their operation.

Of the many issues that Perrin raises, perhaps the most important is her investigation of the notion of "safety culture" and examination of what this could mean within a hierarchical, militarily oriented management structure, in an industry faced with intense production pressures on schedule, output and cost. It has become almost a commonplace, after an incident or accident in a complex system, for investigators and upper management to call for (often unspecified) changes to promote a "culture of safety."

We may compare this notion of a "culture of safety" to the idea of "human error." Before the development of Human Factors as a field, identifying an accident's cause as "human error" meant, in effect, telling the humans in the system: "Don't make errors," clearly not a helpful or effective recommendation. Human Factors, as a field, developed ways of identifying both designs and processes which were prone to error, and changes in design which could reduce error. Currently, the study of organizational culture is at a similar early stage. Calling for a culture of safety means, in effect telling workers and managers "Behave differently, under the same circumstances". For example, a finding that a nuclear plant suffers from "poor communications" might be taken to suggest that workers should be trained in how to speak clearly or assertively. But as Perrin argues, in fact, it is a symptom of the organization of knowledge – the existence of knowledge silos, in a domain where problems cross technical areas. However, the current assumption is that culture change comes free, or at least very cheaply; it is not necessary to make major structural changes to accomplish a culture change.

Perrin outlines the beginning of description of organizational culture which would allow for real cultural changes. Thus, the nuclear industry is organized in a logic of command and control, which appears to offer an *a priori* account of the system, and the ways in which should activities occur within it. This is the official account of how things are supposed to work. Based on her detailed study of the often messy and contingent ways that things actually work, Perrin suggests the unrecognized existence of a parallel logic

of “doubt and discovery” which is used to locate and diagnose problems, and recommends that giving it official status would produce a powerful culture change.

This book is valuable for readers in any discipline who wish to understand more about the actual functioning of complex industrial systems. The author’s background in anthropology contributes to this work’s respect for the actual complexities of work on the ground, although no knowledge of anthropology is demanded of the reader. The demand on the reader is rather the amount of domain knowledge about the nuclear industry that is required in order to understand the incidents described. Perrin honorably refrains from giving her own summary of the incidents described; rather she uses excerpts from event review teams’ reports, quotes from interviews with participants, as well as her own reflections, thus using multiple viewpoints to build an account of the complexity of the situations described. Thus she models the kind of respect for multiple meanings that she recommends.

Science and technology are too often idealized, in both senses of the term. This book, in contrast, presents the real thing.

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